



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,105	10/08/2003	Kenji Abe	1448.1044	4450
21171	7590	08/01/2007		
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER RADOSEVICH, STEVEN D	
			ART UNIT 2117	PAPER NUMBER
			MAIL DATE 08/01/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/680,105

Applicant(s)

ABE ET AL.

Examiner

Steven D. Radosevich

Art Unit

2117

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

GUY LAMARRE
PRIMARY EXAMINER

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1-13 are present within this instant examination, which is in response to applicant's correspondence on 4/27/2007 for continued examination (**RCE**) of the application.

Priority

Acknowledgment is made that foreign priority is claimed for this application and as such the date, 10/09/2002 is being used for this examination.

Information Disclosure Statement

Acknowledgment is made that no further IDS has been submitted for consideration at this time.

Drawings

The drawings are objected to because specifically with respect to figures 10-12 the column width within each of the figures does not appear to be wide enough or the word font is too large. Within each of the figures 10-12 wording within a multitude of rows carries over onto the next row since the column width is not sufficient or the word font is too large. This insufficient column width or the word font being too large is believed to be the causes of both the misalignment between "NODE NAME," "BOOLEAN VARIABLE," "O_NODE AT THE EDGE SIDE," and "1_NODE AT THE EDGE SIDE" values/labels within a row, and the missing node_23 – node_35 and node_54 – node_71 within the "NODE NAME" column. The examiner suggests correction as to the width of each column or the word font. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: on page 18 line 6 it is believed that the specification incorrectly identifies figured 11 wherein it should identify figure 7 for matching "0" and "0_node at the edge side" along with "1" and "1_node at the edge side" between the graph of figure 7 and the tables of figures 10-12.

Appropriate correction is required.

Claim Objections

Claim 6 is objected to because of the following informalities:

At the end of the first line of the claim there is a ":" that should be removed.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

Claim 11 is rejected under 35 U.S.C. 101 because the claim is directed toward a program being a transmission medium, that can be distributed via a network such as the Internet, as is described within the specification on page 31. This transmission medium would include a signal or wave per se, as would be understood by one of ordinary skill within the art at the time the invention was made, as such the claimed contents is directed toward non patentable subject matter since a signal or wave per se is not patent eligible.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 5 and 6 it is unclear to the examiner now that a plurality of validation items are extracted by the extracting unit (in claim 1) which of the plurality of extracted validation items the second generating unit (in claim 1) bases the generation of the input/output sequence on. Examiner notes only a single validation item is used by

Art Unit: 2117

the second generating unit to generate the input/output sequence (see claim 5 and claim 1 last limitation).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 11, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Angilivelil (U.S. Publication 20040025123 A1, published 2/5/2004, filed 7/30/2003, of provisional application 60400425 filed 8/1/2002) and/or 102(b) as being anticipated by Buckley, Jr. (U.S. 20020091980 A1, filed 1/5/2001, published 7/11/2002).

1. As per claims 1, 11, and 12, Angilivelil and/or Buckley teach an apparatus that supports a validation of a target apparatus including a plurality of functional devices by generating an input/output sequence for the target apparatus, comprising:

A first input unit for inputting functional configuration information on the functional devices and connections among the functional devices (Angilivelil 16 in figure 1 and paragraph 25 lines 16-18; Buckley paragraphs 26-27 and figure 1);

A second input unit for inputting a condition for the input/output sequence (Angilivelil 26 in figure 1 and paragraph 25 lines 9-12; Buckley paragraphs 28-31 and figure 1);

A first generating unit that generates a validation item function based on the functional configuration information and the condition (Angilivelil 20 in figure 1 and paragraphs 25-26; Buckley paragraphs 31-32 and figure 1);

An extracting unit that extracts a combination of functional devices as a validation item, from the validation item function (Angilivelil 20 in figure 1 and paragraphs 25-26; Buckley paragraph 34 and figure 1); and

A second generating unit that generates the input/output sequence based on the validation item (Angilivelil 20 in figure 1 and paragraphs 25-26; Buckley paragraph 35 and figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buckley, Jr. (U.S. Patent 6789222 B2, filed 1/5/2001) as applied to claim 1 above.

2. As per claim 2, Buckley teaches the apparatus as described above in detail comprising: a first input unit, a second input unit, a first generating unit, an extraction unit, and a second generating unit.

Buckley does not specifically teach wherein the validation item function is expressed by a binary decision diagram.

However those of ordinary skill within the art at the time the invention was made would recognize that expressing the Boolean function(s) within Buckley in a binary decision diagram(s) is well known.

Therefore it would have been obvious to one of ordinary skill within the art at the time the invention was made to have been motivated to express the Boolean function(s) within Buckley in a binary decision diagram since a binary decision diagram is not only an equivalent to the Boolean function(s) expression but can provide greater understanding and following of the Boolean function(s).

Claims 3, 4, 8, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angilivelil (U.S. Publication 20040025123 A1, published 2/5/2004, filed 7/30/2003, of provisional application 60400425 filed 8/1/2002) and/or Buckley, Jr. (U.S. Patent 6789222 B2, filed 1/5/2001) as applied to claim 1 above.

3. As per claims 3 and 4, Angilivelil and/or Buckley teach the apparatus as described above in detail comprising: a first input unit, a second input unit, a first generating unit, an extraction unit, and a second generating unit.

Angilivelil and/or Buckley do not specifically teach wherein the condition includes a resource constraint condition for the functional devices or a condition that limits the functional devices to be included in the validation item.

However within an analogous art Angilivelil teaches target performance data that one of ordinary skill within the art at the time the invention was made would recognize includes resource constraints of the target apparatus and/or a condition that limits the functional devices to be included in the validation item.

Therefore one it would have been obvious to one of ordinary skill within the art at the time the invention was made to have included within Buckley and/or Angilivelil, Angilivelil's target performance data including a resource constraint condition or a condition that limits the functional devices to be included in the validation item of the target apparatus wherein power, heat, controllability, and/or execution time is critical. Angilivelil discloses timing information is for example included within the performance data.

4. As per claim 8, Angilivelil and/or Buckley teach the apparatus as described above in detail comprising: a first input unit, a second input unit, a first generating unit, an extraction unit, and a second generating unit.

Angilivelil and/or Buckley do not specifically teach the apparatus according to claim 1, further comprising:

A third input unit for inputting a validation environment that defines a flow of data that is input to and output from the target apparatus, wherein the second generating unit that generates the input/output sequence, based on the validation environment and the validation item.

However those of ordinary skill within the art at the time the invention was made would recognize that an input unit for inputting a validation environment that defines a flow of data that is input to and output from the target apparatus, wherein the generating unit that generates the input/output sequence, based on the validation environment and the validation item is well know.

Therefore it would have been obvious to one of ordinary skill within the art at the time the invention was made to have modified Angilivelil and/or Buckley to include an additional input unit for inputting a validation environment that defines a flow of data that is input to and output from the target apparatus, wherein the generating unit that generates the input/output sequence, based on the validation environment and the validation item since with what external testing equipment to implement the generated input/output sequence is required for execution of the input/output sequence.

5. As per claims 9 and 10, Angilivelil and/or Buckley teach the apparatus as described above in detail comprising.

Buckley does not specifically teach wherein the apparatus is connected, via a network, to an information terminal from which the functional configuration information and condition are input and to which the validation item and the input/output sequence are output.

However within an analogous art Angilivelil teaches wherein the apparatus is connected, via a network, to an information terminal from which the functional configuration information and condition are input and to which the validation item and the input/output sequence are output (see figure 1).

Therefore it would have been obvious to one of ordinary skill within the art at the time the invention was made to have incorporated within Angilivelil and/or Buckley the apparatus being connected, via a network, to an information terminal from which the functional configuration information and condition are input and to which the validation item and the input/output sequence are output as taught within Angilivelil since it is a well know and proven reliable way to communicate/transfer information.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Angilivelil (U.S. Publication 20040025123 A1, published 2/5/2004, filed 7/30/2003, of provisional application 60400425 filed 8/1/2002) and/or Buckley, Jr. (U.S. Patent 6789222 B2, filed 1/5/2001) as applied to claim 1 above, and further in view of Applicant's Admitted Prior Art (AAPA) as disclosed (20040073859 A1).

6. As per claim 7, Angilivelil and/or Buckley teach the apparatus as described above in detail comprising: a first input unit, a second input unit, a first generating unit, an extraction unit, and a second generating unit.

Angilivelil and/or Buckley do not specifically teach the apparatus according to claim 1, further comprising:

A converting unit that converts a functional block diagram of the target apparatus into a graph including a plurality of nodes and a plurality of edges,

Art Unit: 2117

wherein the graph is input to the apparatus as the functional configuration information.

However AAPA teaches that conventionally prior to the invention a method existed of extracting an input/output sequence from a functional block diagram created by using a predetermined description language. According to this method, the functional block diagram expresses the apparatus to be validated (tested) as a functional device and a data flow between the functional devices. A graph is created by replacing the functional devices and the data flow with nodes edges, respectfully (paragraph 7).

Therefore it would have been obvious to one of ordinary skill within the art at the time the invention was made to have been motivated to have a converting unit convert a functional block diagram of the target apparatus into a graph including a plurality of nodes and a plurality of edges, wherein the graph is input to the apparatus as the functional configuration information within Angilivelil and/or Buckley since doing so at the time of the invention was the conventional known to work method of preparing the functional configuration information for generating an input/output sequence (AAPA paragraphs 6-7).

Allowable Subject Matter

Claim 13 is allowed.

Conclusion

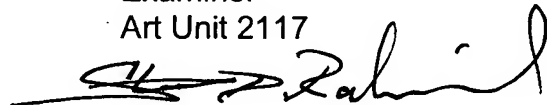
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Radosevich whose telephone number is 571-272-2745. The examiner can normally be reached on 9am-5:30pm.

Art Unit: 2117

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques H. Louis can be reached on 571-272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Radosevich
Examiner
Art Unit 2117

A handwritten signature in black ink, appearing to read 'S. Radosevich', is written over the printed name and title.